



AUCTIONING

Auctioning of Emission Allowances in Germany: Periodical Report for November and the entire Year 2011

IMPRINT

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AUCTIONING OF EMISSION ALLOWANCES IN GERMANY

Since January 2010, the Federal Republic of Germany has been offering an annual total of roughly 40 million emission allowances (EUAs) for auctioning. Between 2010 and 2012 the auctions are held weekly at the spot and futures markets of the European Energy Exchange EEX in Leipzig (see info box below). The German Emissions Trading Authority (DEHSt) at the Federal Environment Agency has commissioned the KfW banking group to act as vendor (seller) of allowances at the EEX on behalf of the Federal Government. Further updated information on terms and conditions of participation is to be found on the [EEX website](#). Previous Periodical Reports are available on the [auctioning website of the DEHSt](#).

Info Box: Participation, Deadlines and Procedure

Weekly auctions of futures or spot contracts at EEX are part of normal exchange trading. Participation is possible either directly for EEX members or indirectly via a broker or as a client of an EEX member. This ensures that small and medium-sized enterprises that have no dedicated trading department can also benefit from the auctions. Exchange members already admitted to emissions trading on the EEX can participate in the weekly auctions at no cost or fixed charges.

From 2010 to 2011, auctions will be held on separate dates between January and October - 300,000 allowances for immediate delivery (spot contract) are auctioned every Tuesday and 570,000 allowances to be delivered by December (futures) are auctioned every Wednesday. In 2012, the weekly volume of futures contracts will increase to 645,000 EUAs. In 2010 and 2011, 870,000 allowances are auctioned weekly on the spot market from November. In 2012 this volume increases to 945,000 allowances. The exact auction dates are published in the respective EEX Auction Calendars for 2011 and 2012.

EEX Calendar 2011: [European Energy Exchange Auction Calendar 2011](#)

EEX Calendar 2012: [European Energy Exchange Auction Calendar 2012](#)

The auction procedure is broadly laid down in the Ordinance on the Auctioning of Emission Allowances (Emissionshandels-Versteigerungsverordnung, EHVV 2012). A single-round, uniform-price procedure is applied at auctions. All successful bidders pay the same price. Auctions are conducted with a closed order book, and bidders can only see their own bids. The minimum bid size is 500 allowances in auctions on the spot market and 1,000 allowances in auctions on the futures market.

1 MARKET SURVEILLANCE REPORT BY THE HÜST

In order to guarantee above-board market activities free of manipulation on the EEX, continuous surveillance is conducted by an independent Market Surveillance Office (Handelsüberwachungsstelle, HÜSt), as required under German law. The HÜSt reports to the DEHSt in regular internal reports on the results of its surveillance activities. HÜSt reported on auctions in 2011 as follows (excerpt):

“The auctions of emission allowances at the EEX on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in 2011 took place following the defined procedure and without any disturbances. For this period, the Market Surveillance of the EEX could not detect any irregularities and especially no behaviour of bidders that aims at manipulating the auction price.”

2 OVERVIEW OF NOVEMBER 2011

This year's auctions on the futures market of the EEX ended as planned on October 26th. The weekly auction volume on the spot market for November was augmented accordingly to 870,000 emission allowances (EUAs). The last auction of the year took place on November 22nd. On the date, the remaining 655,500 EUAs of the total annual volume was offered for auction (see also Chapter 3). In total, 3,265,500 EUAs with a total value of 31,788,435 Euros were auctioned in November, resulting in an average revenue per EUA of 9.73 Euros.

Table 1: Overview of Auction Dates for November 2011

Date	Contract	Number of Bidders	Bid Volume	Auction Volume	Cover Ratio	Clearing Price	Revenue
01/11/2011	Spot	7	5,075,000	870,000	5.83	9.90 €	8,613,000 €
08/11/2011	Spot	7	12,243,000	870,000	14.07	9.95 €	8,656,500 €
15/11/2011	Spot	5	3,570,000	870,000	4.10	9.93 €	8,639,100 €
22/11/2011	Spot	9	3,578,500	655,500	5.46	8.97 €	5,879,835 €
November		28	24,466,500	3,265,500	*7.49	*9.73 €	31,788,435 €

Source: EEX, DEHSt

* Volume-weighted average

3 TOTAL OVERVIEW FOR 2011

In 2011, 89 auctions were held overall and 40,675,500 emission allowances (EUAs) worth 561,569,835 Euros auctioned (average revenue 13.81 Euros). The average revenue for 2011 is thus only 3.9 percent below last year's average (14.36 Euros). In line with legal requirements, 24,510,000 EUAs worth 349,421,400 Euros (average price 14.26 Euros) were sold as futures contracts (MidDec2011) and 16,165,500 EUAs worth 212,148,435 Euros (average price 13.12 Euros) on spot market auctions.

The **total annual amount** for 2011 is calculated from the legally enshrined **basic annual amount** of 40 million EUAs plus further allowances from the national reserve, which are auctioned every year to cover the cost incurred by the Federal Government in the exercise of its duties and responsibilities in connection with emissions trading. The **annual refinancing volume** of EUAs is calculated from the average auction clearing prices for the calendar months January to October and the nominal refinance need. The 2011 refinancing budget of 675,289 allowances was published on the relevant [DEHSt website](#) on November 4th. Taking into account the minimum bid size of 500 EUAs on the EEX spot market, the total annual amount for 2011 is 40,675,500 allowances.

Overall, bids for over 318 million EUAs were entered into the trading system. Aggregated bidder demand and auction volume (supply) produced a cover ratio of 7.82. In contrast to the previous year, the cover ratio on the spot market (8.27) was slightly above the comparable futures-market ratio (7.52). The annual average of active bidders per auction (see Chapter 4) was 6. Deviations of clearing prices from secondary trading prices on the lead markets were minimal, remaining largely in the tenth-of-a-percent range (see Chapter 5).

The fact that auction clearing prices hardly deviated from secondary market trading prices confirms once again that in a competitive market environment even a relative small number of bidders suffices to ensure that emission allowances are efficiently auctioned at market prices. The total number of potential bidders in relation to the volume to be auctioned must be sufficient to generate a suitably high general demand. It seems that these conditions continue to be met at the German auctions at the EEX. The cumulated auction results of 2011 are shown in Table 2.

Table 2: Comprehensive Overview for 2011

Month	Contract	Number of Auctions	Bid Volume	Auction Volume	Cover Ratio	Clearing Price	Revenue
January	Spot	4	5,931,000	1,200,000	*4.94	*14.14 €	16,965,000 €
	Futures	4	11,877,000	2,280,000	*5.21	*14.51 €	33,071,400 €
February	Spot	3	8,657,000	1,200,000	*7.21	*14.66 €	17,595,000 €
	Futures	4	14,081,000	2,280,000	*6.18	*14.87 €	33,892,200 €
March	Spot	5	11,693,000	1,500,000	*7.80	*15.92 €	23,886,000 €
	Futures	5	25,105,000	2,850,000	*8.81	*16.54 €	47,139,000 €
April	Spot	4	9,529,000	1,200,000	*7.94	*16.45 €	19,737,000 €
	Futures	4	18,997,000	2,280,000	*8.33	*16.92 €	38,577,600 €
May	Spot	5	19,924,000	1,500,000	*13.28	*16.62 €	24,930,000 €
	Futures	4	24,197,000	2,280,000	*10.61	*16.69 €	38,047,500 €
June	Spot	4	15,479,000	1,200,000	*12.90	*15.12 €	18,147,000 €
	Futures	5	20,503,000	2,850,000	*7.19	*15.55 €	44,328,900 €
July	Spot	4	15,477,000	1,200,000	*12.90	*12.49 €	14,988,000 €
	Futures	4	21,270,000	2,280,000	*9.33	*12.63 €	28,790,700 €
August	Spot	5	8,868,000	1,500,000	*5.91	*11.94 €	17,913,000 €
	Futures	5	20,097,000	2,850,000	*7.05	*12.41 €	35,374,200 €
September	Spot	4	3,719,000	1,200,000	*3.10	*11.62 €	13,944,000 €
	Futures	4	14,079,000	2,280,000	*6.18	*11.67 €	26,613,300 €
October	Spot	4	10,012,000	1,200,000	*8.34	*10.21 €	12,255,000 €
	Futures	4	14,088,000	2,280,000	*6.18	*10.35 €	23,586,600 €
November	Spot	4	24,466,500	3,265,500	*7.49	*9.73 €	31,788,435 €
	Futures	-	-	-	-	-	-
Spot		46	133,755,500	16,165,500	*8.27	*13.12 €	212,148,435 €
Futures		43	184,294,000	24,510,000	*7.52	*14.26 €	349,421,400 €
Total		89	318,049,500	40,675,500	**7.82	**13.81 €	561,569,835 €

Source: EEX, DEHSt

* Equally weighted average

** Volume-weighted average

4 BIDDER PARTICIPATION

The total volume of 40.67 million EUAs auctioned in 2011 went to 272 successful bidders. Of these, 145 participated on the futures market and 127 on the spot market. The number of successful bidders thus remained slightly below the levels of the previous year (316). During the reporting period, a total of 524 bidders actively took part in the auctions.¹ From a bidder's perspective, the average success rate over all 89 auction dates was just over 50 percent. The average quantity awarded per successful bidder was approximately 127,000 allowances in spot auctions and 169,000 in futures auctions.

¹ As trading participants are allowed to enter bids on several successive dates, the number of participating and successful bidders does not necessarily reflect the true number of different parties taking part in auctions over the reporting period. It must also be taken into account that bidders were able to participate indirectly via intermediaries such as banks and financial service providers, which is not reflected in the quoted number of participants. Numbers only include trading participants acting as intermediaries, not indirect third-party bidders.

Info Box: Uniform Price Auction at the EEX

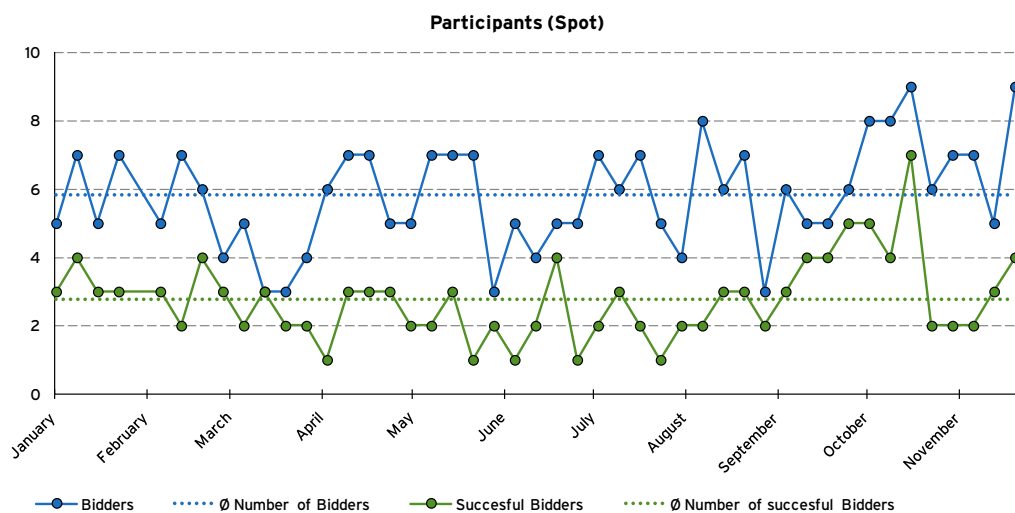
The German auctions at the EEX follow the uniform price procedure, which is common practice throughout the European Union. It involves one round of bidding and a closed order book. This simple and robust procedure protects against market manipulation and will continue to be used during the third trading period and for aviation. The uniform price procedure means that all successful bidders pay the same price. The auction clearing price is determined by ranking all eligible bids, beginning with the highest bid, according to the bidding price.

In the event of a tied bid, bids are additionally ranked according to the time they were entered, beginning with the earliest bid („first-come-first-served principle“). Starting with the highest bid, the volumes of the bids are aggregated until the volume of emission allowances on offer (300,000 (spot) and 645,000 (futures)) is reached. The bid price at which the aggregate volume of bids reaches or exceeds the offered volume of auctioned allowances determines the auction clearing price.

Bidders will thus be awarded their bid volume if their bidding price at least matches the auction clearing price. If a bid exactly matches the clearing price, the bidder may be awarded the remaining allowances, which may be below the volume demanded, depending on the bidding situation. If several participants' bid exactly matches the auction clearing price, the above-mentioned „first-come-first-served“ principle applies.

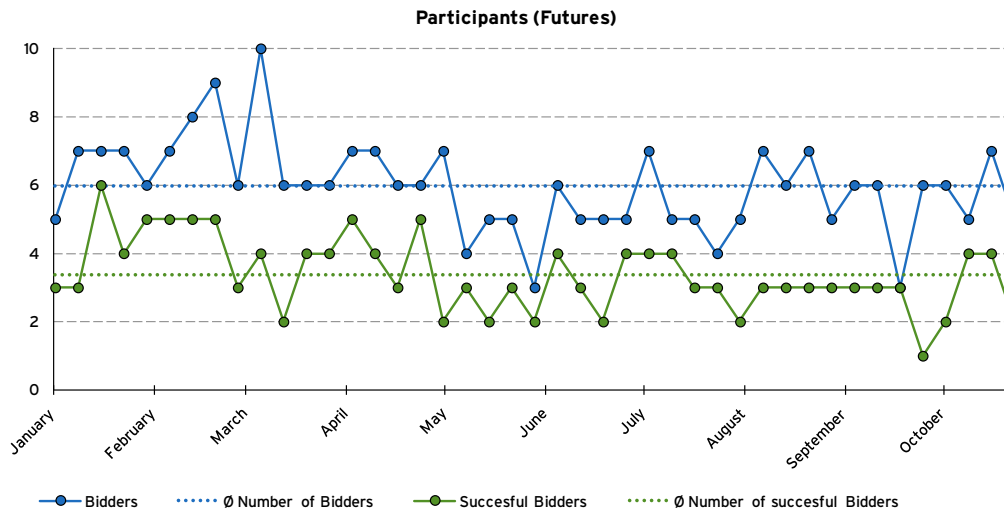
Figures 1 and 2 show the structural development of participant numbers for spot and futures markets respectively. In both segments, bidder participation essentially fluctuated between 4 and 8 bidders. Only 6 out of 89 auction dates saw fewer than 4 active bidders.

The number of eventually successful bidders fluctuated between 2 and 4 bidders in approximately 80 percent of all auctions. Only in one auction on the futures market and on five on the spot market did the number of successful bidders fall below the threshold of two.



Source: EEX, DEHSt

Figure 1: Number of participating and successful bidders per auction date in 2011 (spot)



Source: EEX, DEHSt

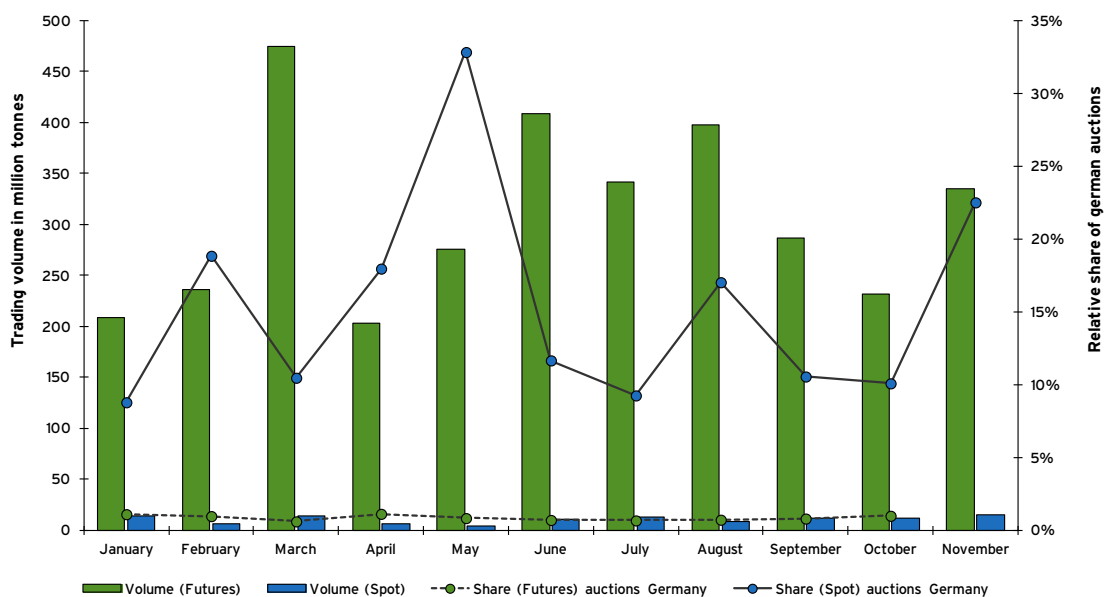
Figure 2: Number of participating and successful bidders per auction date in 2011 (futures)

5 AUCTIONS AND THE SECONDARY MARKET

5.1 TRADING VOLUME ON THE SECONDARY MARKET

While a total of 40.67 million emission allowances were auctioned by the Federal Republic of Germany in 2011, the secondary market trading volume for the same period was over 3.5 billion allowances (3.1 billion in 2010).² The average market share of German auctions in 2011 was approximately 1.1 percent. The volume share of the futures auctions on the substantially more liquid futures market (trading volume 3.4 billion EUAs) was approximately 0.7 percent, whereas the share of spot auctions amounted to approximately 14 percent. Figure 3 shows the market volumes traded over the relevant period and the share of German auction volumes on a monthly basis.

² The analysis only includes transaction for immediate delivery (spot) and futures contracts maturing in December 2011, which are traded at the ICE/ECX, BlueNext, EEX, Nasdaq OMX and GreenX exchanges. Only transactions concluded at the exchange (screen-traded) or bilateral transactions that went through the exchange clearing mechanisms are included, whereas options and longer-maturing futures contracts are not included. Spot contracts auctioned by other EU Member States in 2011 are also included.



Source: ICE/ECX, GreenX, BlueNext, EEX, Nasdaq OMX, DEHSt

Figure 3: Total market trading volume and relative share of German auctions (EEX) in 2011

5.2 CLEARING PRICES AND PRICE DEVELOPMENT ON THE SECONDARY MARKET

For the evaluation of auction clearing prices realised, reference prices from the most liquid exchanges were used as benchmarks (see next Info Box). The reference contract for the auctioning of the MidDec11 futures contract is the Dec11 Future, traded at the London ICE/ECX, whereas the BlueNext EUA spot market in Paris is the reference for spot auctions.

Info Box: Reference Prices

In regular exchange trading, participants enter their buying and selling requests (bids and asks) into an order book, which is constantly updated. As in German auctions, such buying bids include quantity and price limits. The price limit is the highest price a buyer is prepared to pay for the purchase of an allowance. Sellers, too, can put a price limit on their bid, i.e. a minimum price per allowance sold.

The order book is open to inspection by any participant. It shows the currently highest purchase offer (best bid) and the lowest sales offer (best ask) with the relevant quantities. Trading occurs where best bid and best ask overlap. The best bid is therefore a good indicator for the willingness to pay on a market. Trading price records finally show at what price limits supply equals demand.

Table 3 shows the relative deviations of clearing prices at futures auctions from the London lead market just before the end of the bidding period. Reference prices were the last trade and the last best bid. The average deviation from the last best bid for all 43 auction dates was -0.01 percent, while the corresponding last trade deviation was -0.12 percent. Deviations for individual auction dates during the reporting period varied between -0.51 and +0.38 percent (Last Best Bid) and -0.86 and +0.12 percent (Last Trade) respectively, which is comparable to the previous year.

Table 3: Futures Market Auctions and Deviations from the Secondary Market Price (ICE/ECX Dec11) in 2011

Auction Date	Contract	Clearing Price	Deviation from Lead Market (ICE/ECX Dec11)	
			Last Best Bid	Last Trade
January	Futures	*14.51 €	*-0.10%	*-0.16%
February	Futures	*14.87 €	*-0.02%	*-0.07%
March	Futures	*16.54 €	*0.02%	*-0.07%
April	Futures	*16.92 €	*-0.03%	*-0.15%
May	Futures	*16.69 €	*-0.02%	*-0.08%
June	Futures	*15.55 €	*-0.10%	*-0.21%
July	Futures	*12.63 €	*-0.08%	*-0.33%
August	Futures	*12.41 €	*0.10%	*0.02%
September	Futures	*11.67 €	*0.09%	*-0.09%
October	Futures	*10.35 €	*0.03%	*-0.07%
Futures		*14.26 €	*-0.01%	*-0.12%

Source: KfW, DEHSt

* Period average

Table 4 shows clearing price deviations at spot auctions from the reference price at the BlueNext exchange (last best bid) and from the ICE/ECX futures market (Dec11 Futures).

Due to proprietary uncertainty regarding stolen EUAs, the first half of the year was characterised by the temporary detachment of auction prices from the secondary market prices for spot and futures contracts. In this volatile market environment, the EEX clearing house (ECC) decided to separate registry procedures for auctions from secondary trading on March 1st in order to guarantee trade participants the safe origin of EUAs bought at the primary market. The spot contracts auctioned by the Federal Republic of Germany thus retained their value in relation to futures contracts. Between mid-February and early May, market participants have paid a slight premium for German EUAs compared to secondary spot market prices (see Table 4). This was also reported by the DEHSt in its two first quarterly reports for 2011.

Deviations of clearing prices on the spot market from the Futures Dec11 contracts remained at -0.38 to -2.64 percent (here monthly average), which is usual in functioning markets where spot contracts are normally rated lower than front-year contracts. The average deviation for all 46 auction dates was -1.52 percent. As expected, the price gap between spot and futures contracts gradually closed towards the futures maturity date in December.

Table 4: Spot Market Auctions and Deviations from the Secondary Market Price (BlueNext and ICE/ECX) in 2011

Auction Date	Contract	Clearing Price	Deviation from Lead Market	
			Last Best Bid Spot (BlueNext)	Last Best Bid Futures Dec11 (ICE/ECX)
January	Spot	*14.14 €	*-0.02%	*-2.08%
February	Spot	*14.66 €	*1.31%	*-2.33%
March	Spot	*15.92 €	*2.64%	*-2.64%
April	Spot	*16.45 €	*2.30%	*-2.26%
May	Spot	*16.62 €	*0.02%	*-1.74%
June	Spot	*15.12 €	*0.20%	*-1.37%
July	Spot	*12.49 €	*0.21%	*-1.04%
August	Spot	*11.94 €	*0.15%	*-1.08%
September	Spot	*11.62 €	*-0.24%	*-1.13%
October	Spot	*10.21 €	*0.21%	*-0.67%
November	Spot	*9.73 €	*0.05%	*-0.38%
Spot		*13.12 €	*0.62 %	*-1.52 %

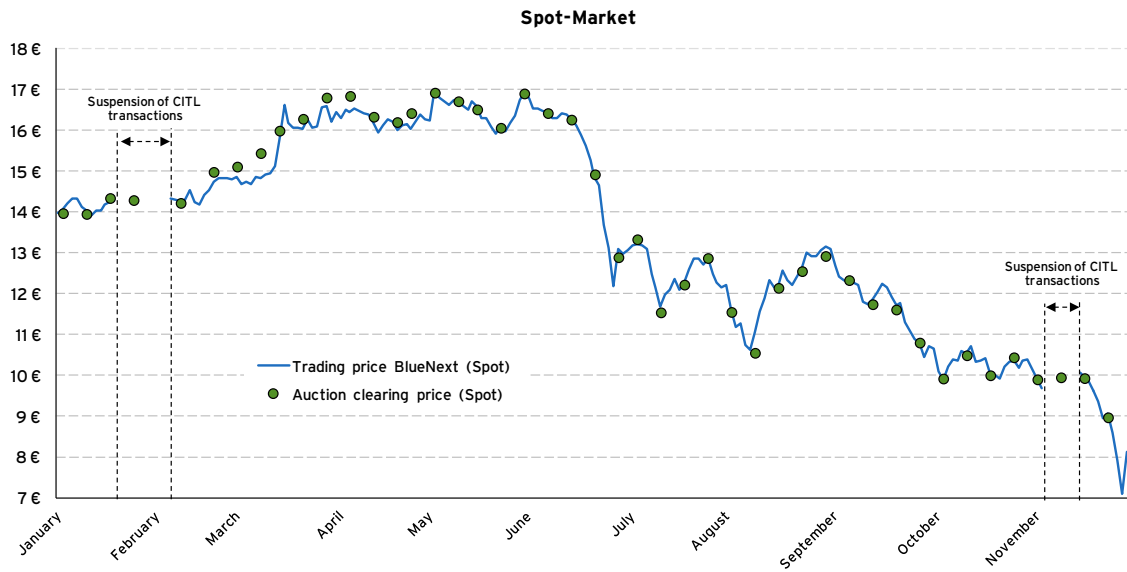
Source: KfW, DEHSt

* Period average

To complement the snapshot of the markets during call phases on auction days, Figures 4 (spot) and 5 (futures) give an overview of the clearing prices in German auctions in the context of historical price developments on the relevant lead markets throughout the calendar year. Rather than following the common practice of just looking at settlement prices, our analysis takes into account all trades completed at the relevant exchanges during the reporting period.³ The following graphics are based on volume-weighted average trading prices.

The price reintegration on the spot market since mid-May observed in the short-term market analysis (Table 3) is also reflected in Figure 4. Since between mid-January and early February, the European Commission suspended all transactions in all European registries in the wake of security breaches associated with stolen EUAs. Therefore EUAs earmarked to be auctioned could not be transferred to the EEX clearing house's registry account (ECC) for the spot market auction on February 1st and the auction was suspended. A postponement of the spot auction on January 25th, however, was prevented because the relevant EUAs were delivered to the ECC just before CITL transfers were suspended. Futures auctions were not affected at any time and took place as planned. Due to maintenance work on the ITL, European registries were not available in early November. Auctions were not affected, whereas secondary trading on BlueNext had to be suspended in both cases (see also Figure 4). Out of 181 planned German auctions, only one was postponed due to force majeure.

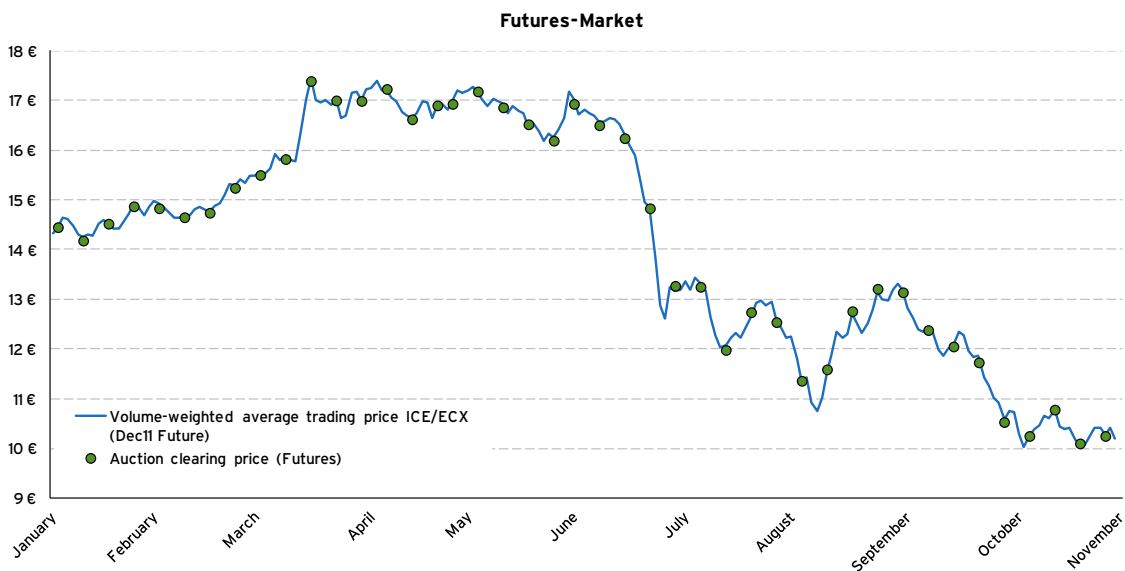
³ Settlement prices are set by the exchanges at the end of the trading day. Usually settlement prices only reflect trade activity immediately before closure of the exchange and are thus not always an adequate reflection of the secondary market.



Source: BlueNext, EEX, DEHSt

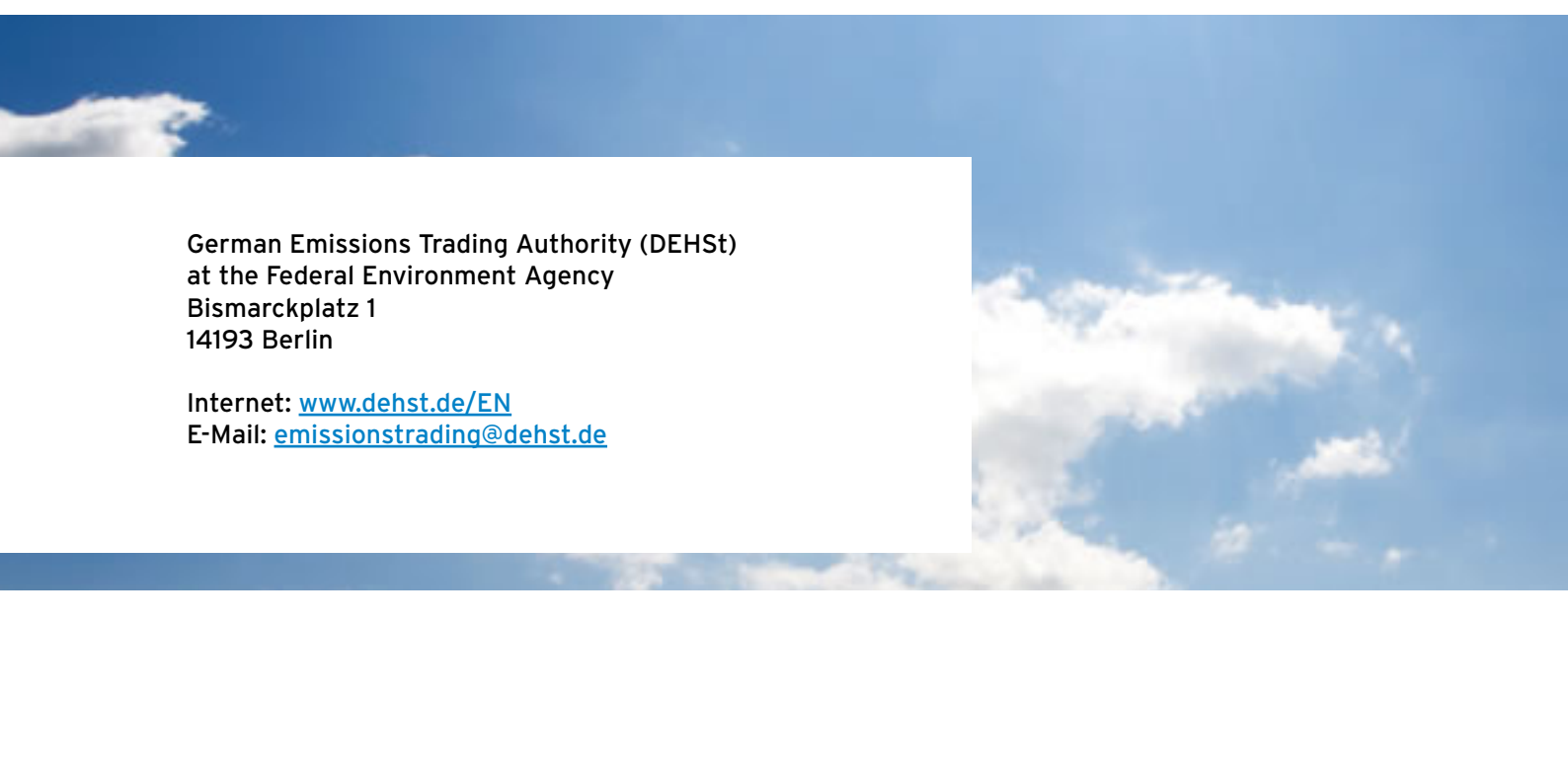
Figure 4: Spot market clearing prices and daily average price at the BlueNext spot market in 2011

At the ICE/ECX, trading prices for the delivery of an emission allowance as a futures contract due in December 2011 fluctuated between 10.03 Euros and 17.45 Euros. As Figure 5 shows, auctions over the entire reporting period were held almost in parallel to the London lead market. In this volatile environment, clearing prices in futures auctions fluctuated between 10.10 Euros and 17.39 Euros.



Source: ICE/ECX, EEX, DEHSt

Figure 5: Futures market clearing prices and volume-weighted average price at ICE/ECX (Dec11 Future) in 2011



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